

control unit MCU plays the roles of the above-mentioned client service provider and charging surrogate service provider, thereby performing the authentication processing and charging processing on the subscriber wired terminals, the mobile information terminals MS1 and MS2, and the camera-equipped digital mobile phones MS3 and MS4.

[0104] The following describes an external configuration of the camera-equipped digital mobile phone MS3 to which the present invention is applied. As shown in FIG. 21, the camera-equipped digital mobile phone MS3 is composed of a display section 212 and a main body 213 and collapsible around a hinge 211 at the center.

[0105] The display section 212 has a retractable transmission/reception antenna 214 at the upper left side. The camera-equipped digital mobile phone MS3 transmits and receives radio waves with the base station CS3 via the antenna 214.

[0106] The display section 212 has a camera section 215 which is pivotable in a range of about 180 degrees at the upper center section. The camera-equipped digital mobile phone MS3 images desired objects by a CCD camera 216 housed in the camera section 306.

[0107] If the camera section 215 is rotated by the user about 180 degrees, the display section 212 is positioned with a speaker 217 arranged at the rear center of the camera section 215 faced to the front side as shown in FIG. 22. Thus, the camera-equipped digital mobile phone MS3 gets in the normal audio talk mode.

[0108] In addition, the display section 212 has a liquid crystal display (LCD) 218 at the front center section. The liquid crystal display 218 displays the contents of electronic mail, a simplified home page, and an image taken by the CCD camera 216 of the camera section 215 in addition to radio wave reception status, battery remaining amount, names and numbers of phones registered as a telephone directory, and an outgoing call history.

[0109] On the other hand, the main body 213 has operation keys 219 including numeric keys "0" through "9," a call key, a redial key, a hang-up/power key, a clear key, an electronic mail key, and other keys on the front surface. Various commands are inputted from these operation keys 219 into the camera-equipped digital mobile phone MS3.

[0110] Below the operation keys 219 of the main body 213, a memo button 220 and a microphone 221 are arranged. When the memo button 220 is pressed, the camera-equipped digital mobile phone MS3 records the voice of the called party. The camera-equipped digital mobile phone MS3 picks up the voice of the user in the talk mode through the microphone 221.

[0111] In addition, a rotatable jog dial 222 is arranged over the operation keys 219 on the main body 213 in a manner in which the jog dial 222 is slightly projecting from the surface of the main body 213. In accordance with the rotary operation of the jog dial 222, the camera-equipped digital mobile phone MS3 executes the scrolling of a telephone directory list or an electronic mail displayed on the liquid crystal display 218, the turning of the displayed pages of simplified home page, and the feeding of displayed images, for example. For example, the main body 213 selects a desired telephone number from among those in a telephone direc-

tory list displayed on the liquid crystal display 218 by the rotation of the jog dial 222 by the user and, when the jog dial 222 is pressed into the main body 213, enters the selected telephone number, thereby automatically originating a call to the party at the selected telephone number.

[0112] It should be noted that a battery pack, not shown, is loaded in the main body 213 at the rear side. When the hang-up/power key is turned on, power is supplied from the battery pack to each circuit, making the camera-equipped digital mobile phone MS3 ready for operation.

[0113] The main body 213 also has a Memory Stick slot 224 at the upper left side in which the detachable Memory Stick 223 is loaded. When the memo button 220 is pressed, the camera-equipped digital mobile phone MS3 records the voice of the called party into the loaded Memory Stick 223. In accordance with the operation of the user, the camera-equipped digital mobile phone MS3 records an electronic mail, a simplified home page, or an image taken by the CCD camera 216 into the loaded Memory Stick 223.

[0114] The Memory Stick 223 is a kind of flash memory card developed by Sony Corporation, the applicant hereof. The Memory Stick 223 incorporates a flash memory element, one kind of EEPROM (Electrically Erasable and Programmable Read Only Memory) which is a nonvolatile memory capable of electrically rewriting and deleting, housed in a plastic case, in a small and thin shape, having dimensions of 21.5 mm×50 mm×2.8 mm. The Memory Stick allows writing and reading of various data such as images, voices, and music via a 10-pin terminal.

[0115] The Memory Stick 223 uses a proprietary serial protocol which guarantees compatibility with the devices wherein it is used even if the specifications of the incorporated flash memory have been changed due to the increase in its capacity for example, realizes the high-speed performance of maximum write rate of 1.5 MB/S and maximum read rate of 2.45 MB/S, and ensures the high reliability by the provision of an erroneous-deletion preventing switch.

[0116] Consequently, the camera-equipped digital mobile phone MS3, configured to detachably load the Memory Stick 223, can share data with other electronic devices via the Memory Stick 223.

[0117] The following describes an exemplary circuit configuration of the camera-equipped digital mobile phone MS3. As shown in FIG. 23, the camera-equipped digital mobile phone MS3 is configured so that a main controller 250 for centrally controlling each portions of the display section 212 and the main body 213 is connected to a power supply circuit 251, an operation input controller 252, an image encoder 253, a camera interface 254, an LCD (Liquid Crystal Display) controller 255, an image decoder 256, a multiplexer/demultiplexer 257, a recording/reproducing section 262, a modulation/demodulation circuit 258, and an audio codec 259 via a main bus 260, and the image encoder 256, the image decoder 256, the multiplexer/demultiplexer 257, the modulation/demodulation circuit 258, and the audio codec 259 are interconnected by a synchronous bus 261.

[0118] The power supply circuit 251, when the hang-up/power key is turned on by the user, supplies power from the battery pack to each component circuit, thereby making the camera-equipped digital mobile phone MS3 ready for operation.